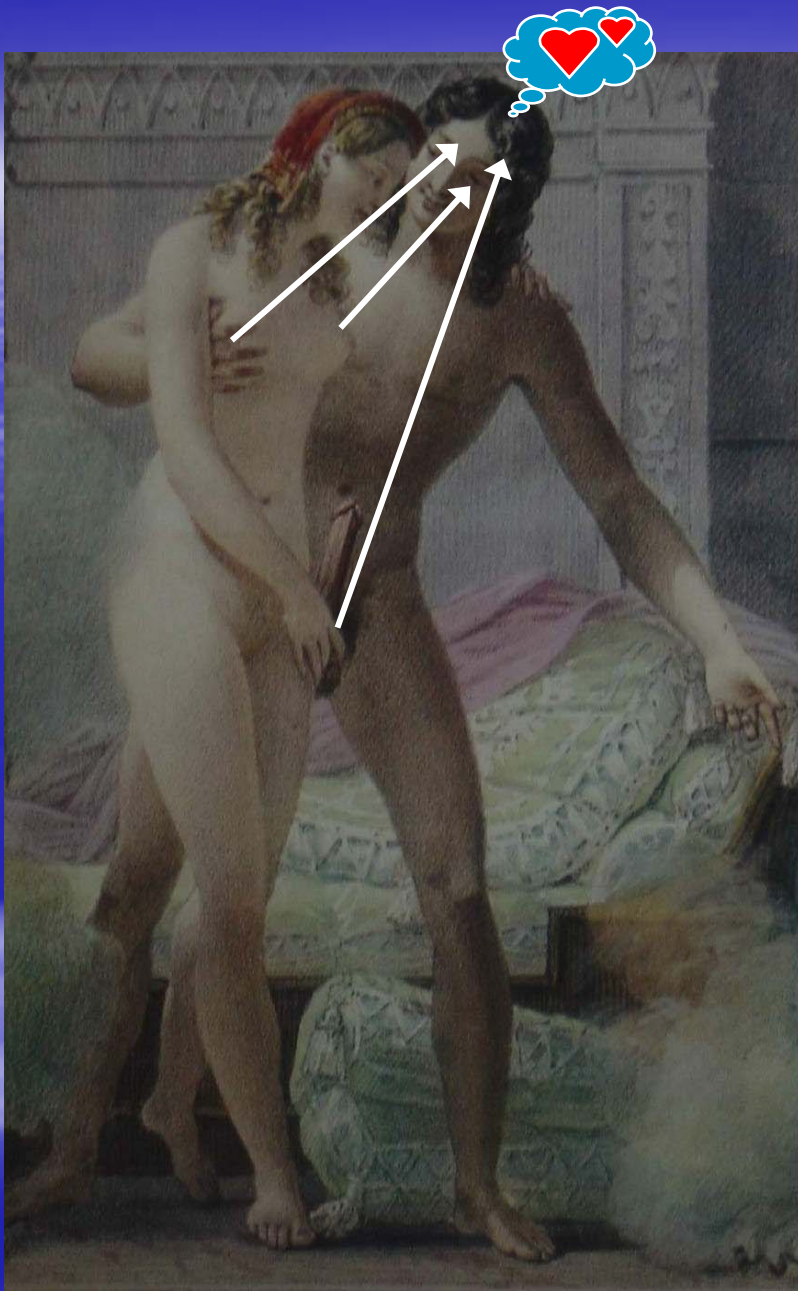


*Georges A. de Boccard, M.D.
Consultant Urologist F.E.B.U.*

Sexual function and dysfunction in men

Geneva Foundation for Medical Education and Research
Training Course in Reproductive Health / Sexual Health Research
Geneva 2006



The physical pathways of a normal erection?

After erotical stimulation

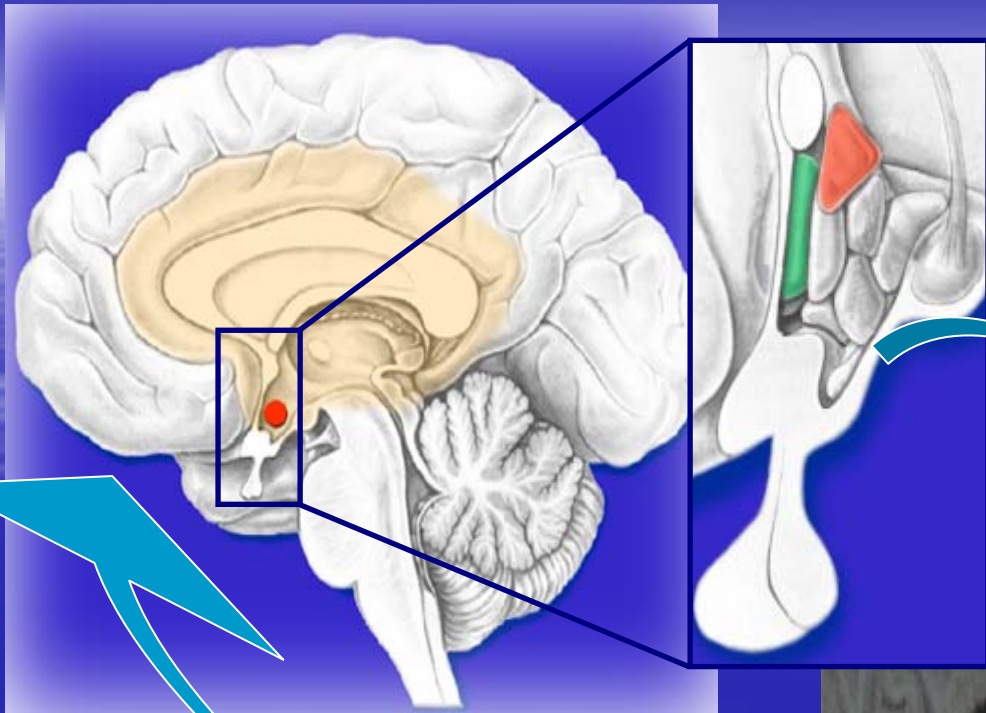
And physical stimulation

visual

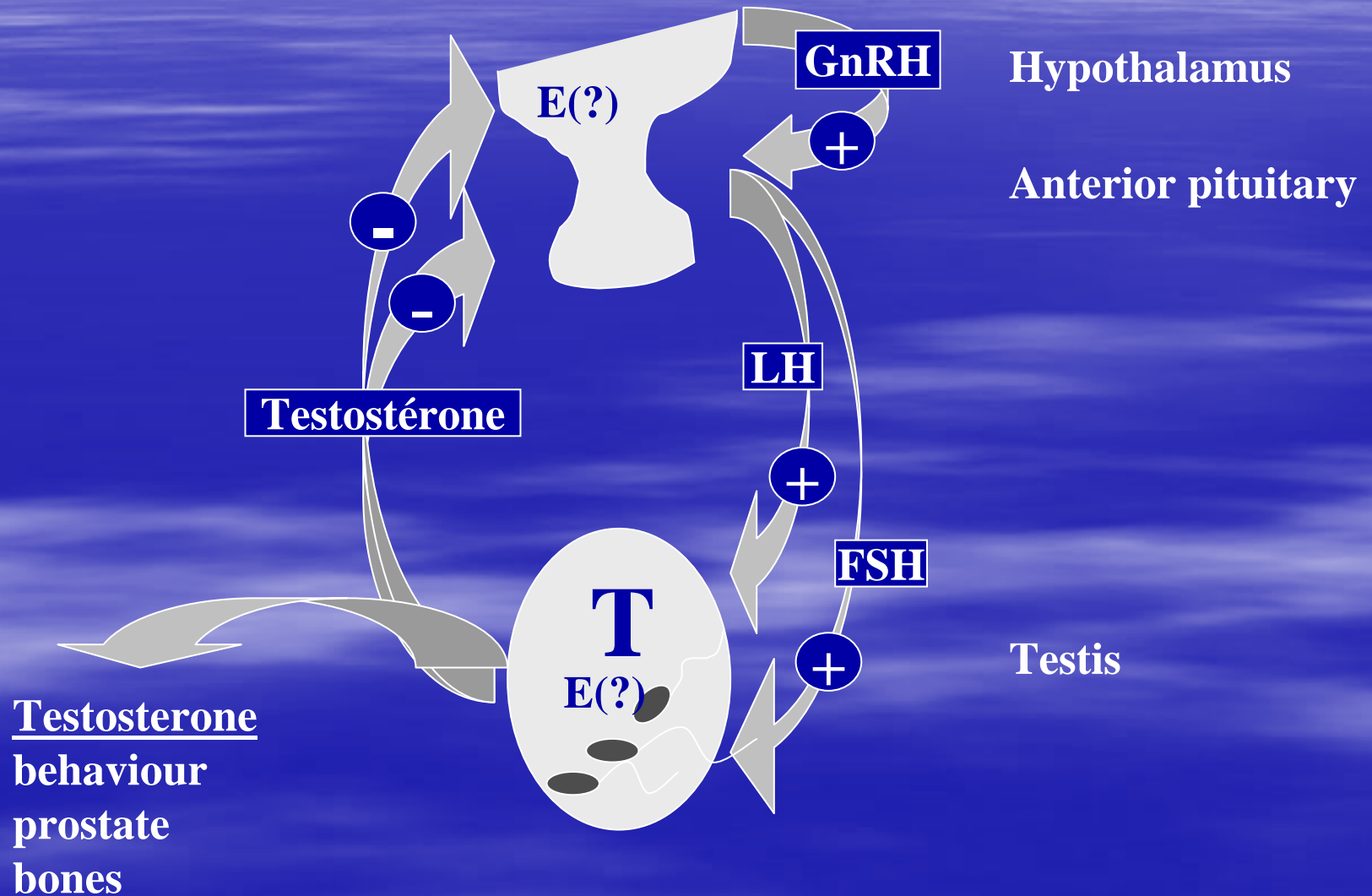
tactile

genital

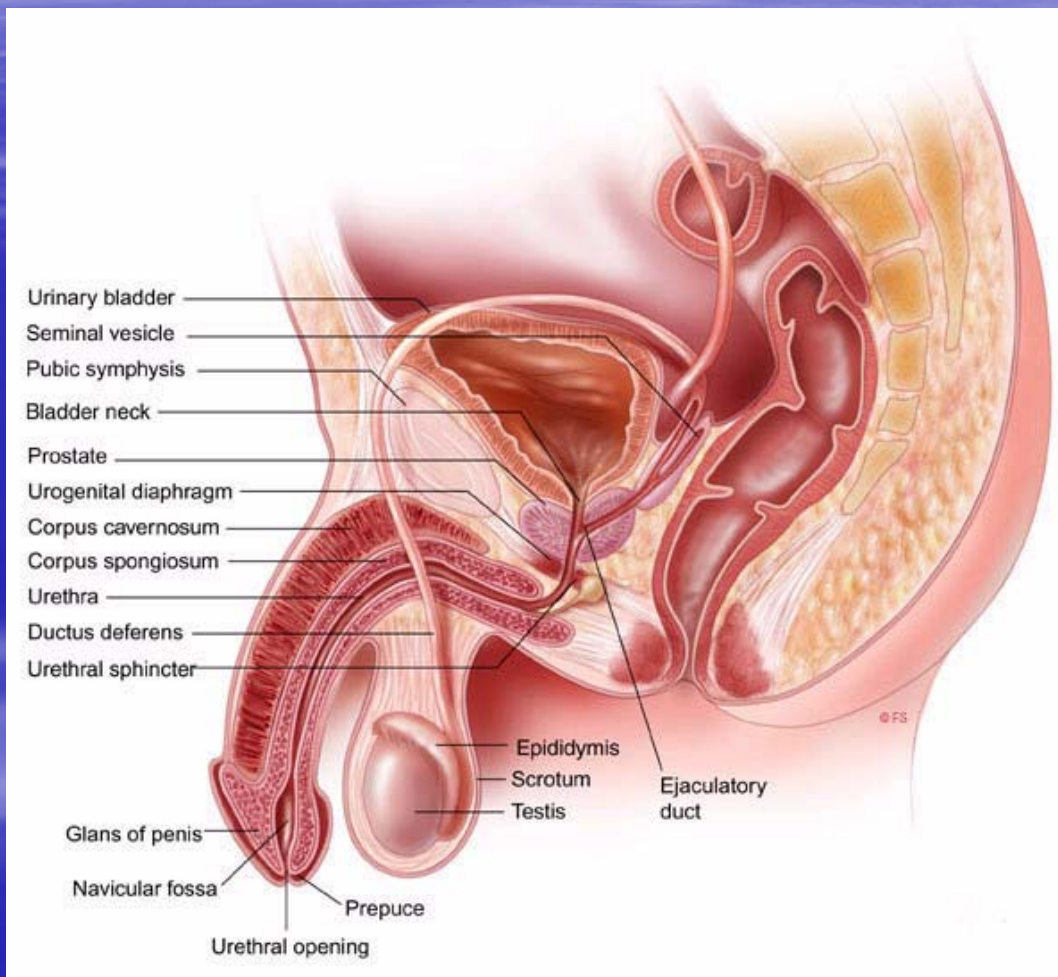
1. Anatomy and physiology of normal erection
2. Incidence of erectile dysfunctions
3. Causes of erectile dysfunctions
4. Diagnostic tools
5. Treatments



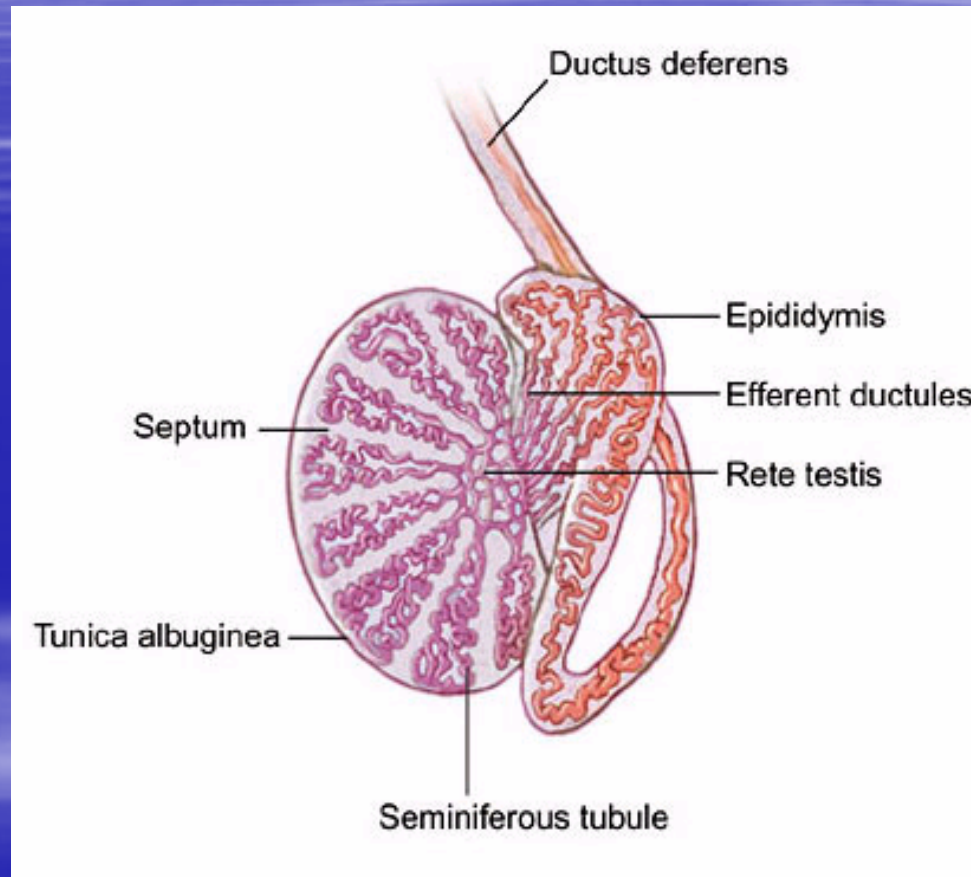
Pituitary & gonadal physiology



Anatomy



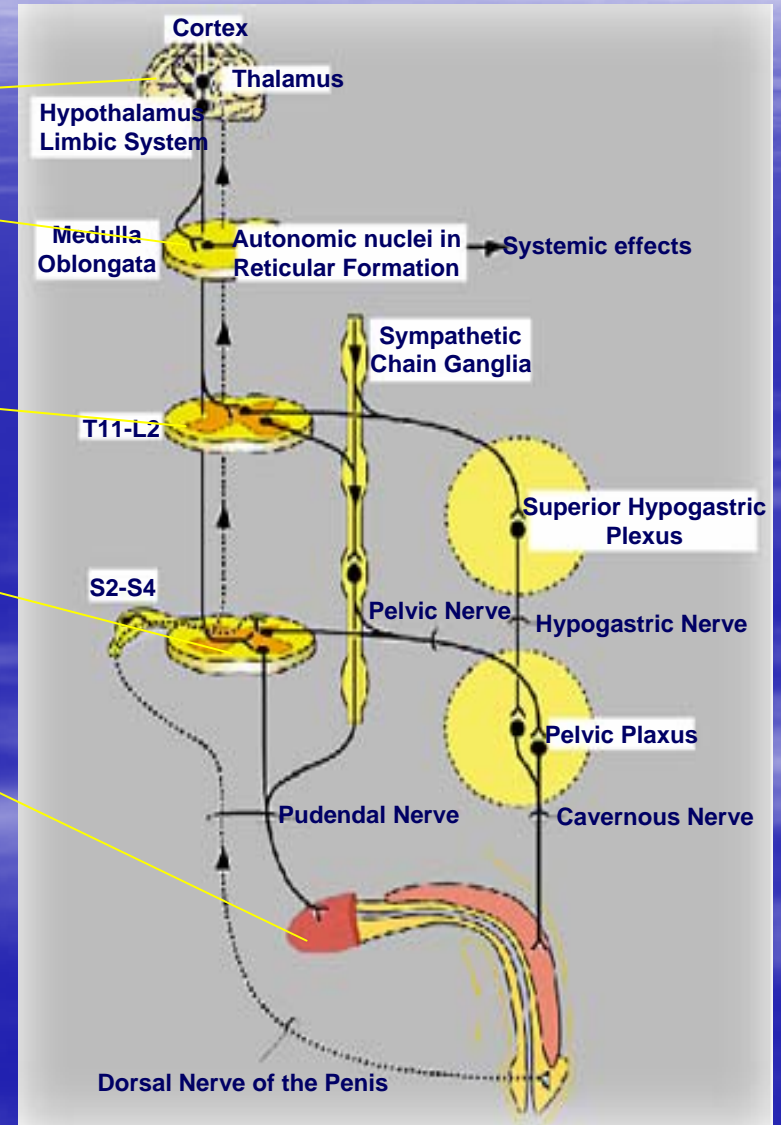
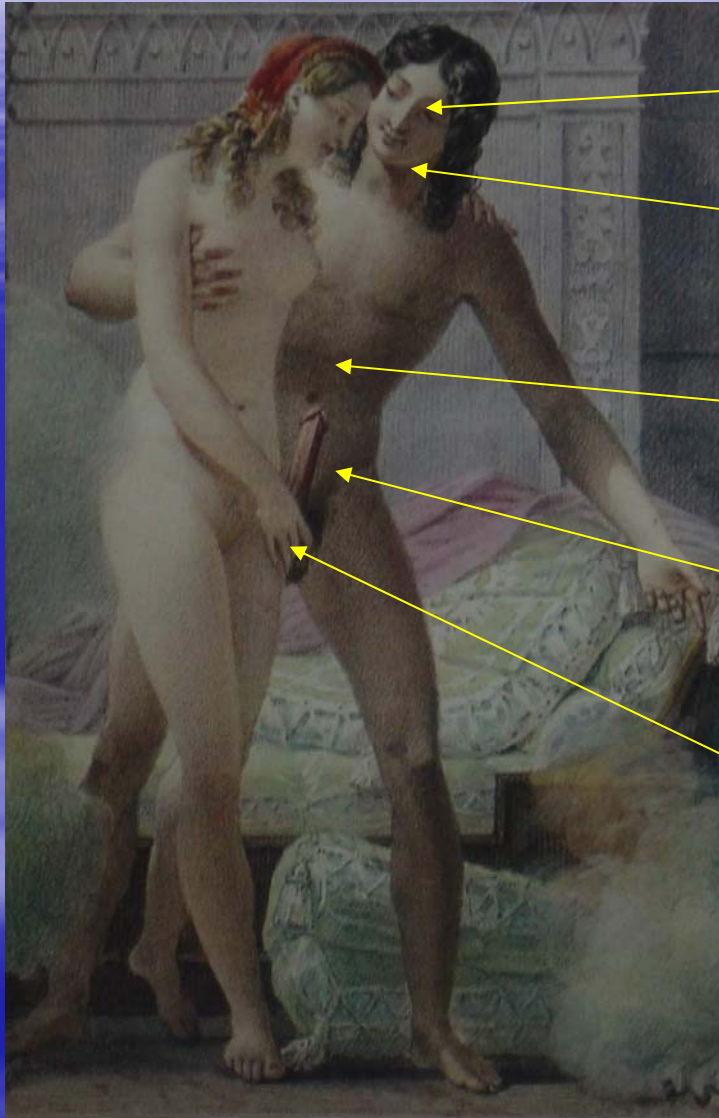
Anatomy

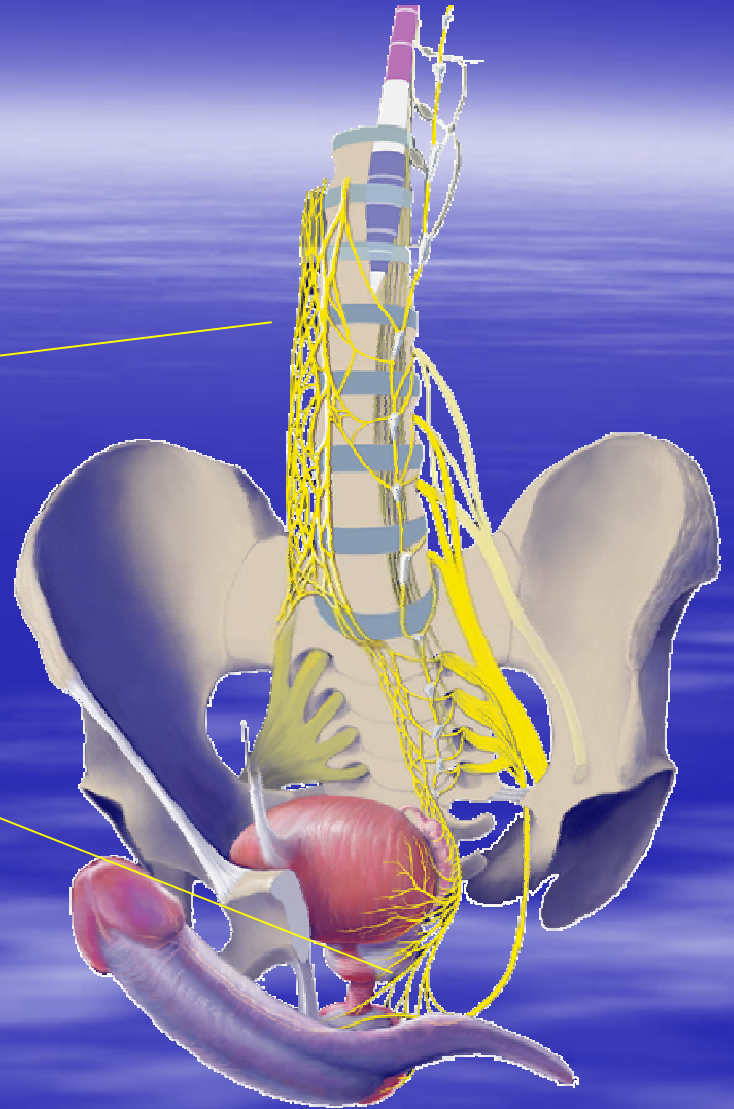
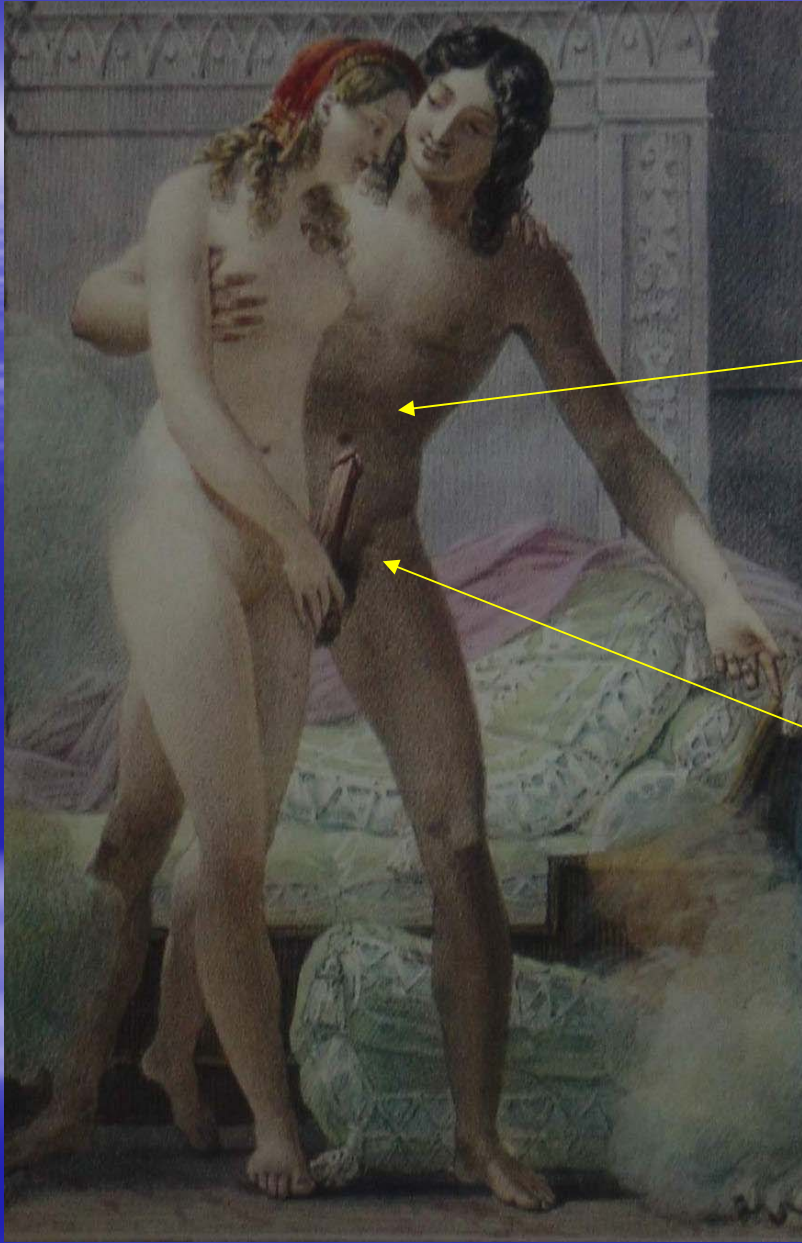


Neurophysiology

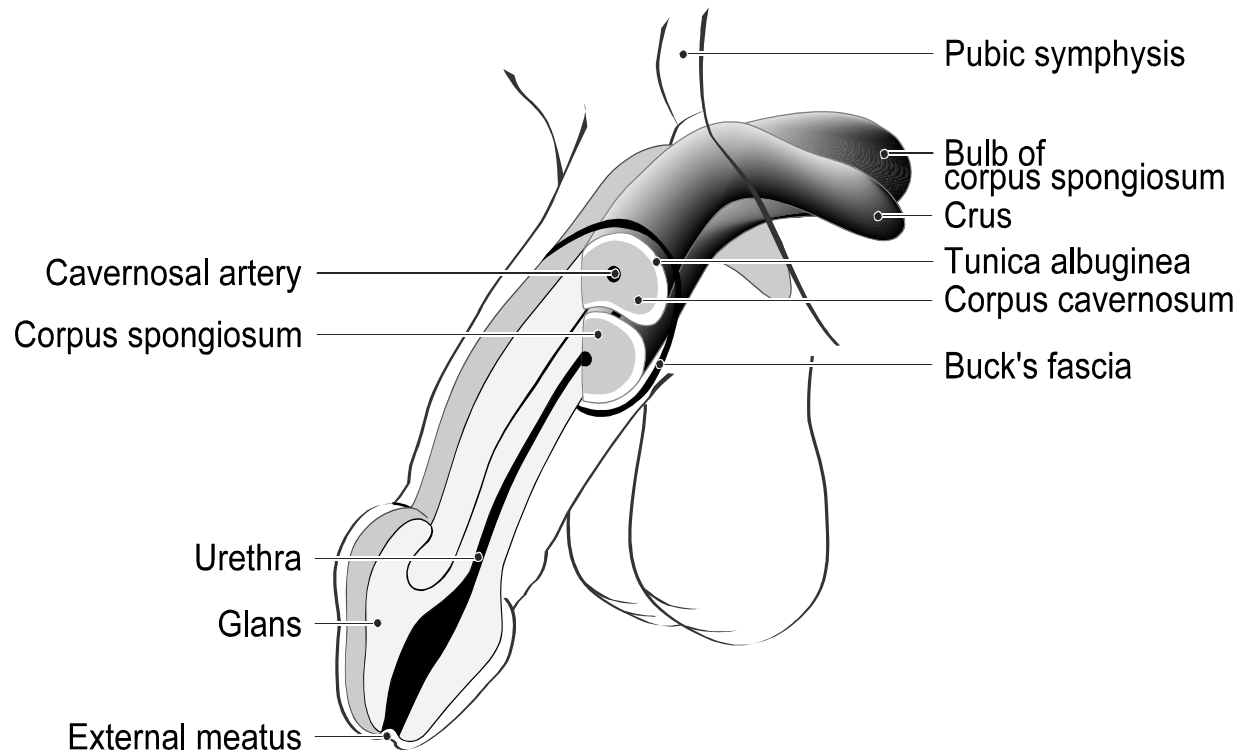
- **Cavernous Nerves**
 - Parasympathetic nitrenergic
 - Sympathetic adrenergic
 - control of the blood flow (rigidity- flaccidity)
- **Pudendal Nerves**
 - Sensitive (positive feed-back)
 - motors : contraction of perineal muscles (ischio- and bulbocavernous)

Functional neuroanatomy of erection

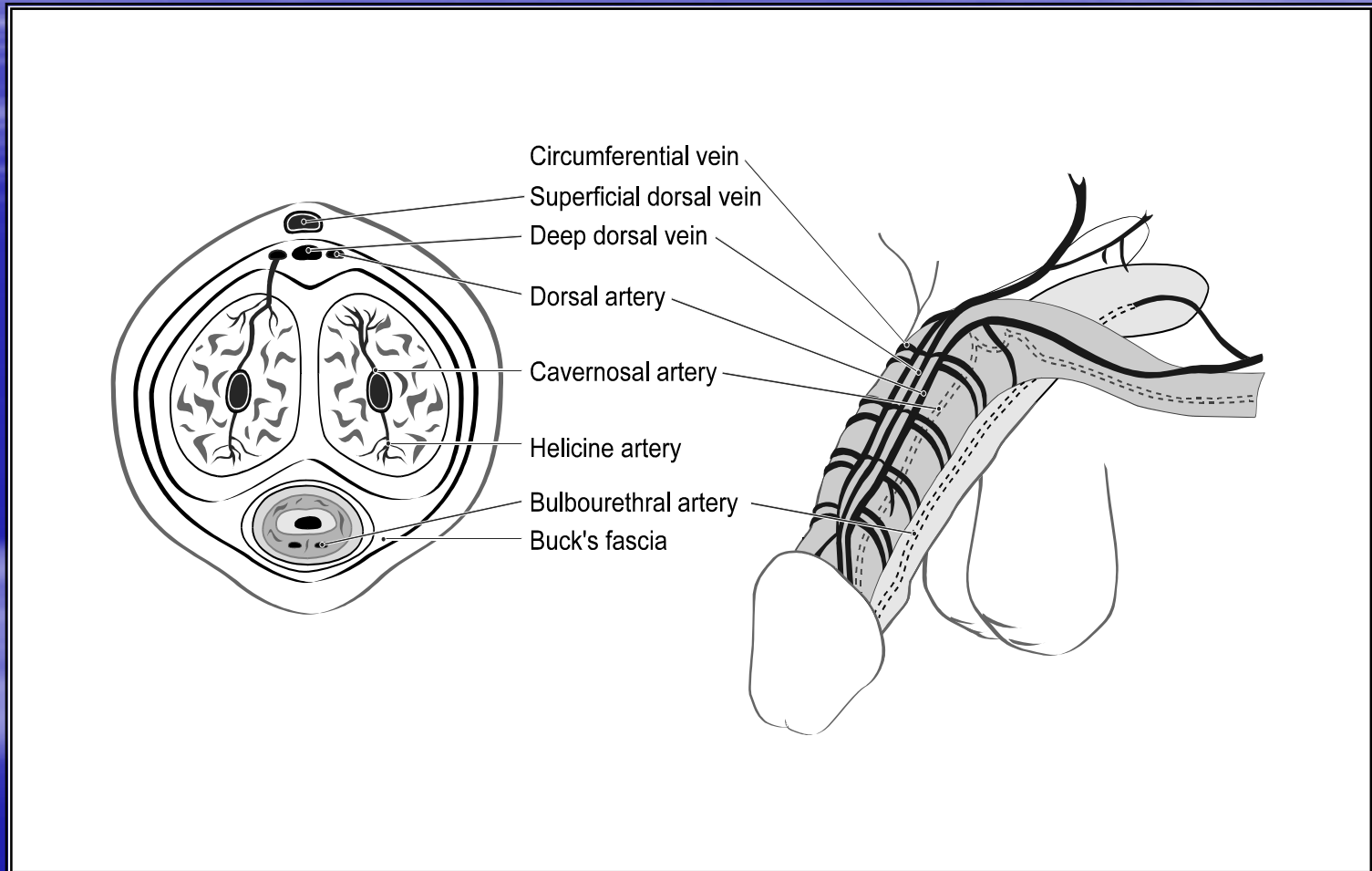




Penile anatomy



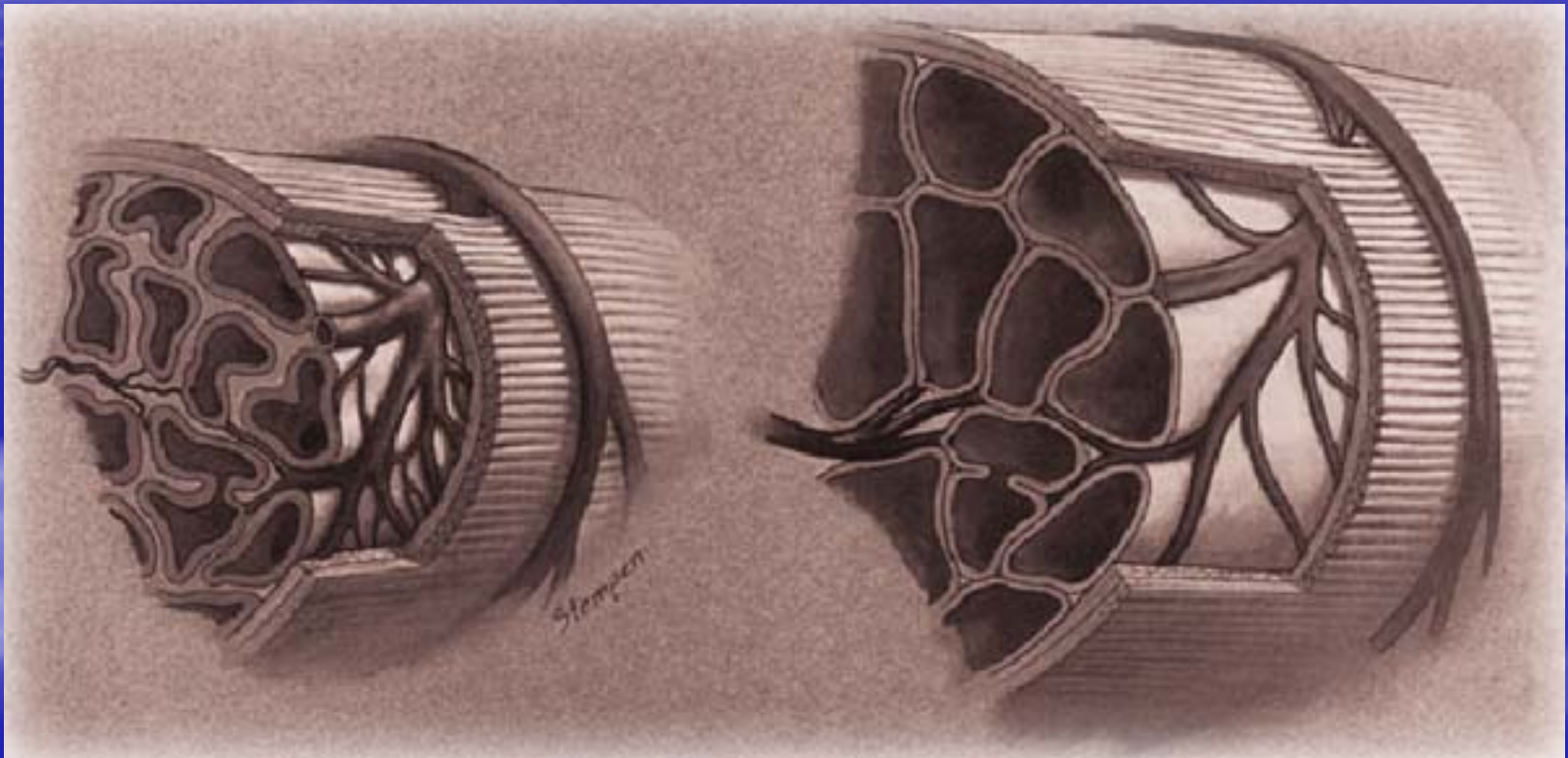
Vascularisation



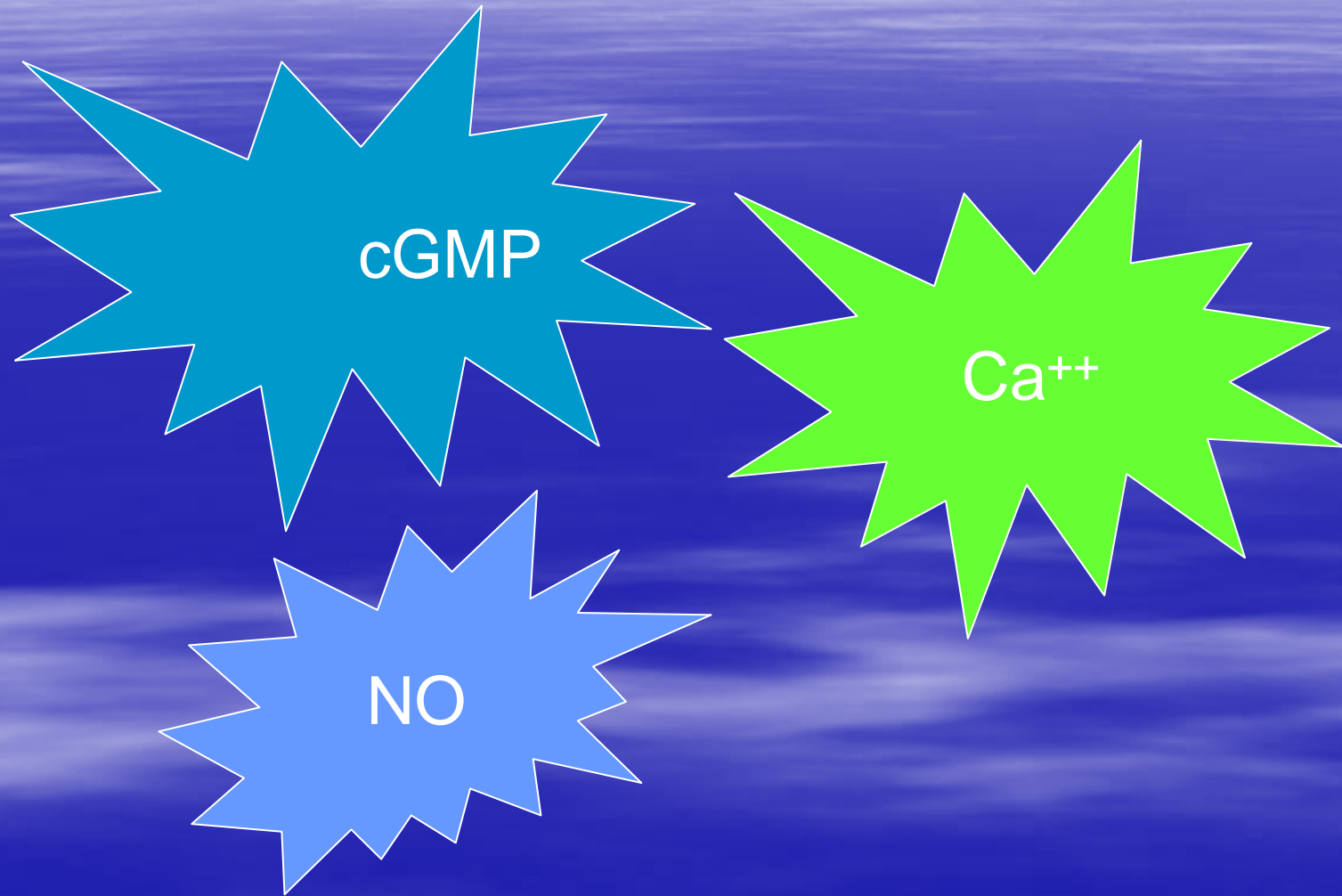
Anatomy of corpus cavernos

Flaccidity

Erection

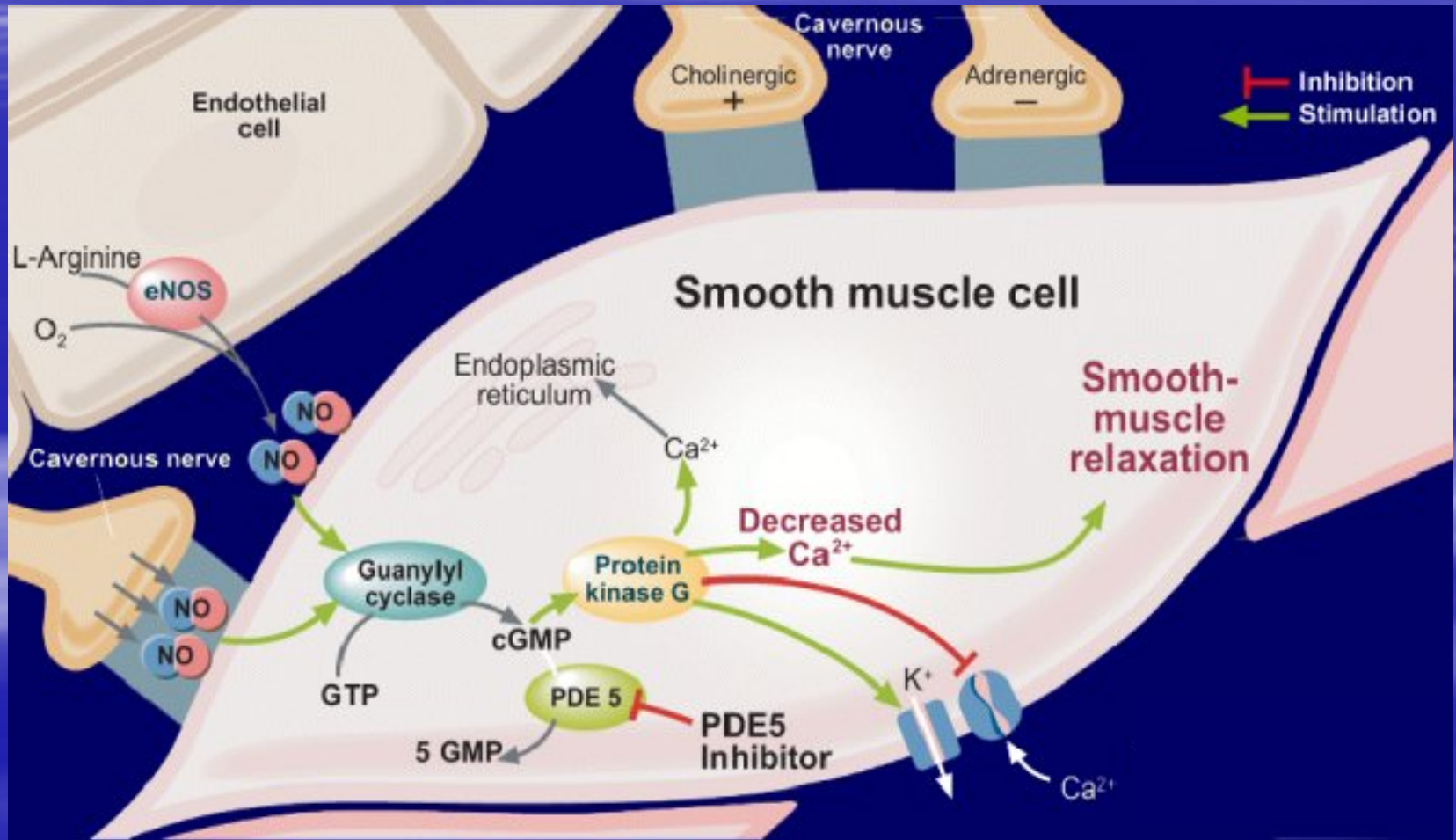


Erectile physiology



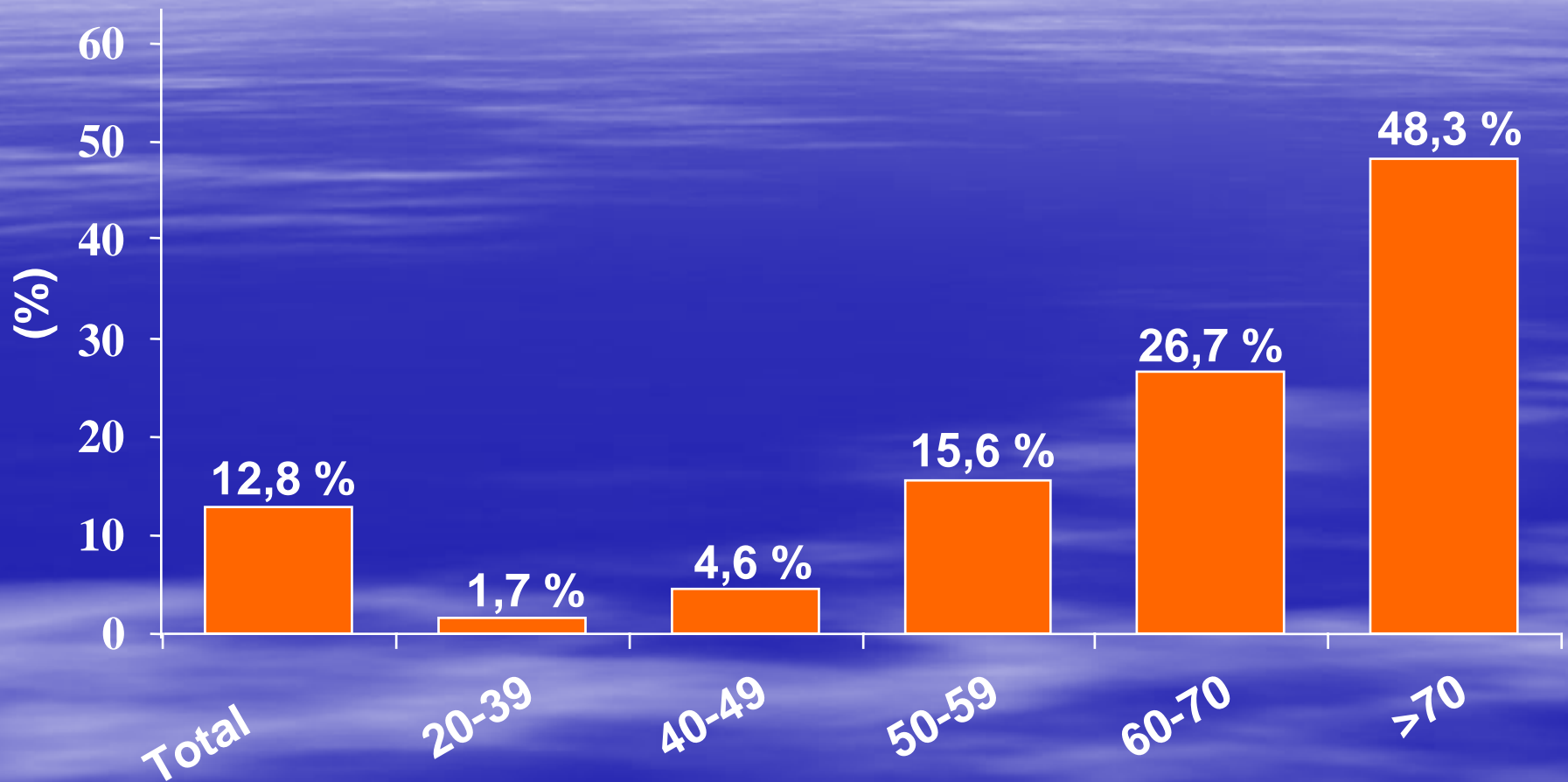
NO - cGMP

relaxation of the cavernous smooth muscle inducing erection



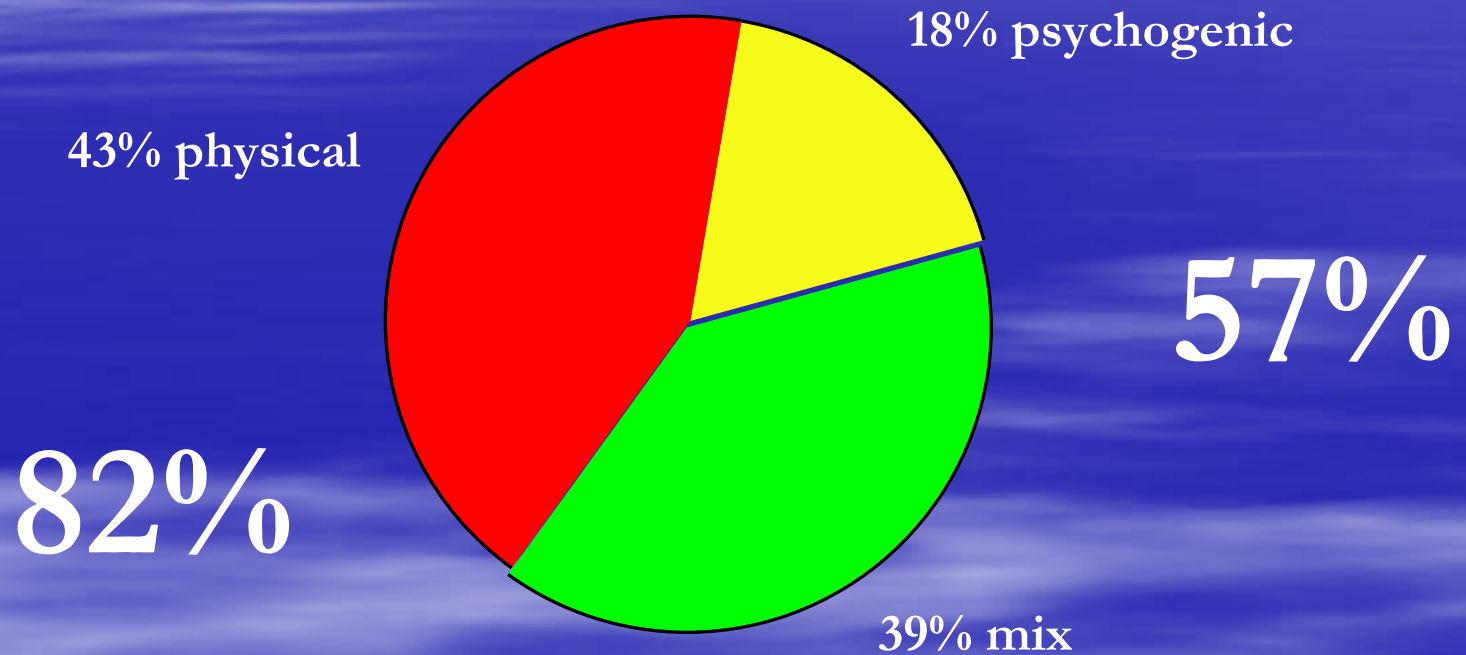
1. Anatomy and physiology of normal erection
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Incidence of erectile dysfunction in Europe

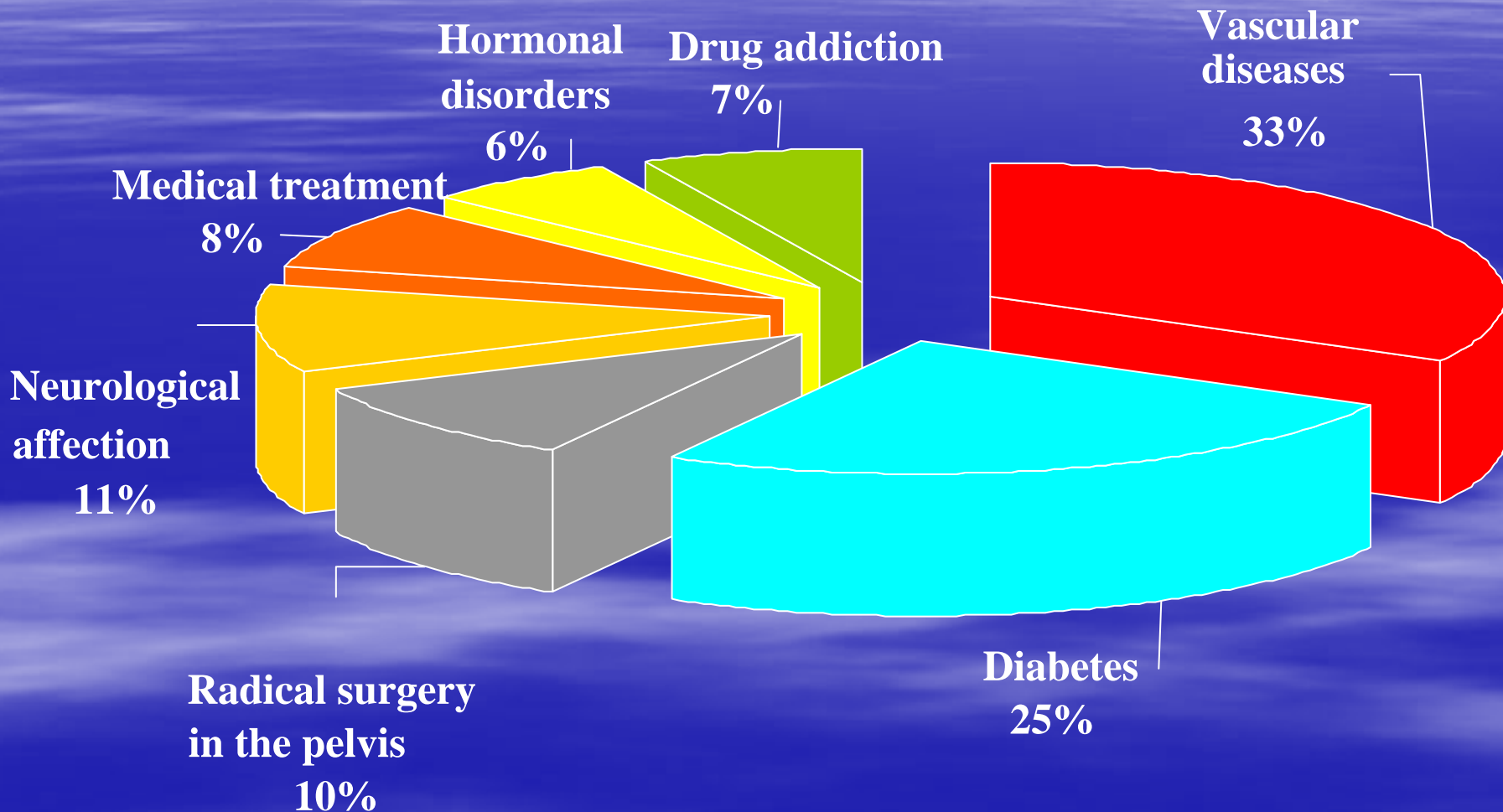


1. Anatomy and physiology of normal erection
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Causes of erectile dysfunctions



Causes of erectile dysfunctions



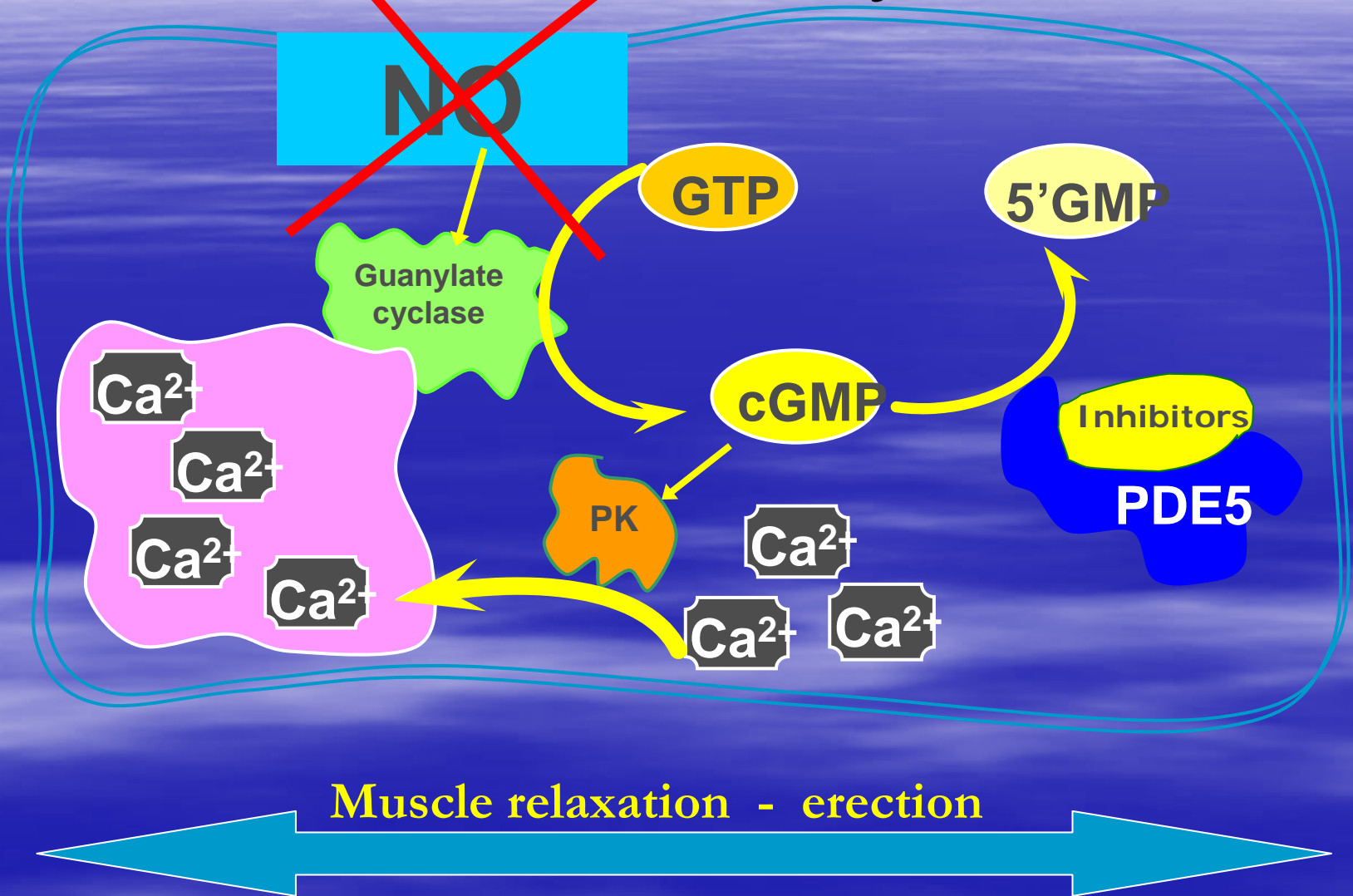
Causes of erectile dysfunctions

Role of the vascular endothelium

Any condition that induces a lack of NO production from the vascular endothelium may be a cause of erectile dysfunction.

Since NO secretion is centrally modulated (brain), any relational disturbance will negatively affect the corpus cavernous, The same way as a vascular or neurological disorder.

Causes of erectile dysfunctions



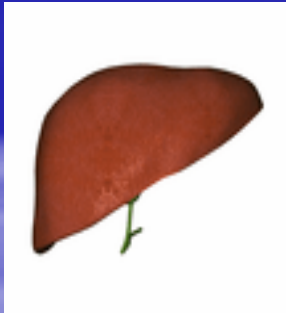


Hormones and aging



Pituitary

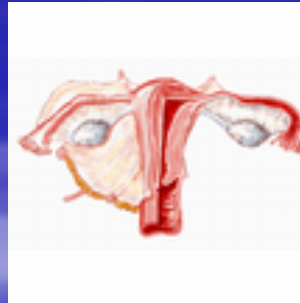
GH ↓



IGF-1 ↓

Somatopause

LH / FSH ↓



E₂ ↓ / T ↓

Menopause / Androclysis



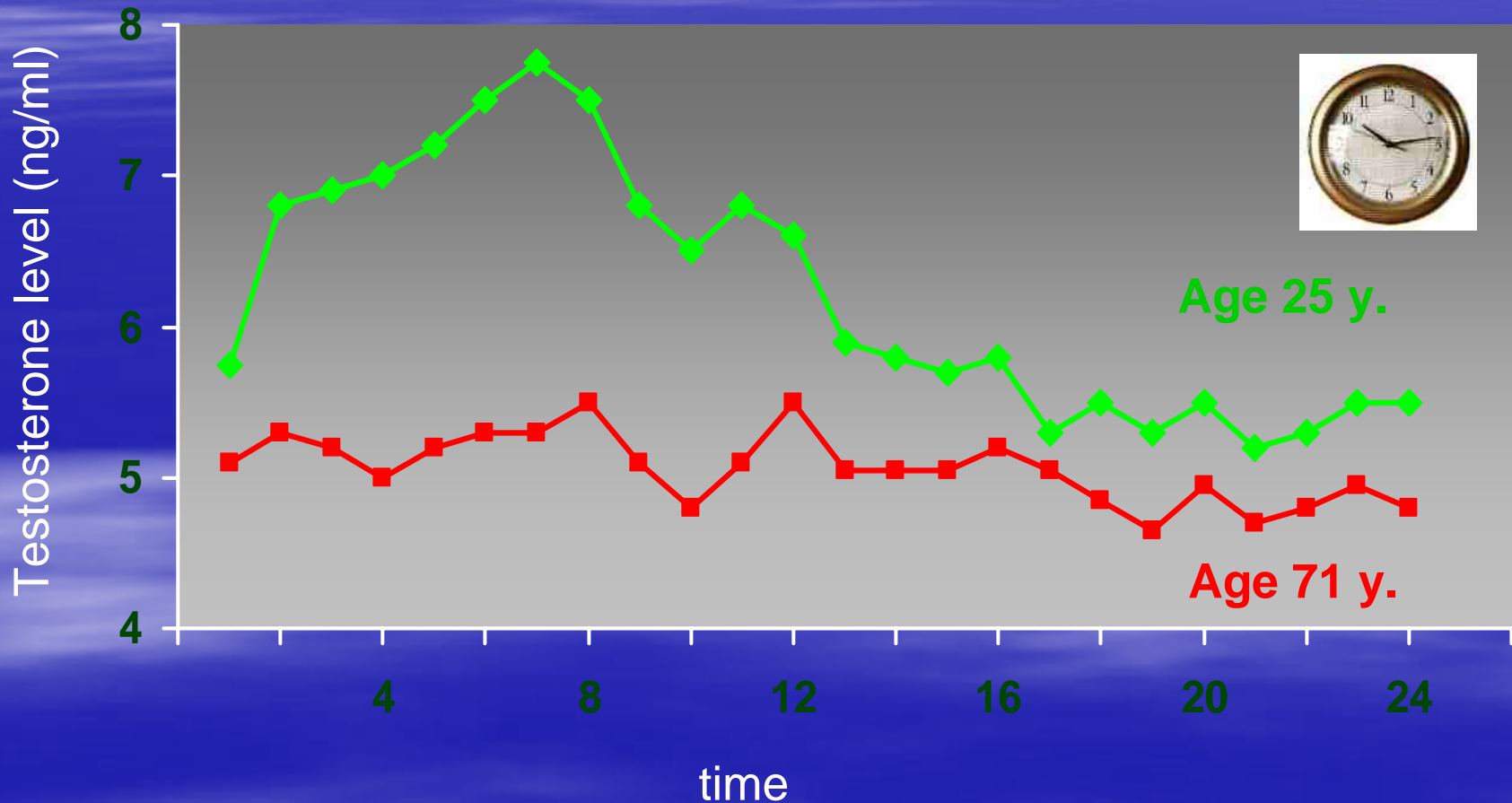
ACTH =



DHEA ↓

Adrenopause

Day-night testosterone level



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3. Causes of erectile dysfunctions
4. **Diagnostic tools**
5. Treatments

Diagnostic tools

Special investigations

**Duplex sonography
with pharmacostimulation**

Intra cavernous injection test

Lab. Blood and hormonal status

Physical examination

History

History

- Onset, nature, duration
- Rigidity, shape of the penis
- External factors (psych. or prof. stress)
- Associated diseases
- Former therapies
- Expectations regarding the treatment.

Physical examination

- General condition
- Blood pressure, pulsations
- External genitals
- Inflammatory diseases (teeth)
- DRE
- Neurological evaluation

Lab tests

- Fasting glycaemia (HbA1c)
- Lipidic profile
- Blood formula
- Liver enzymes
- Hormones
 - Testosterone (free)
 - (PRL – TSH – T4)
- PSA
 - % free PSA
- Urine

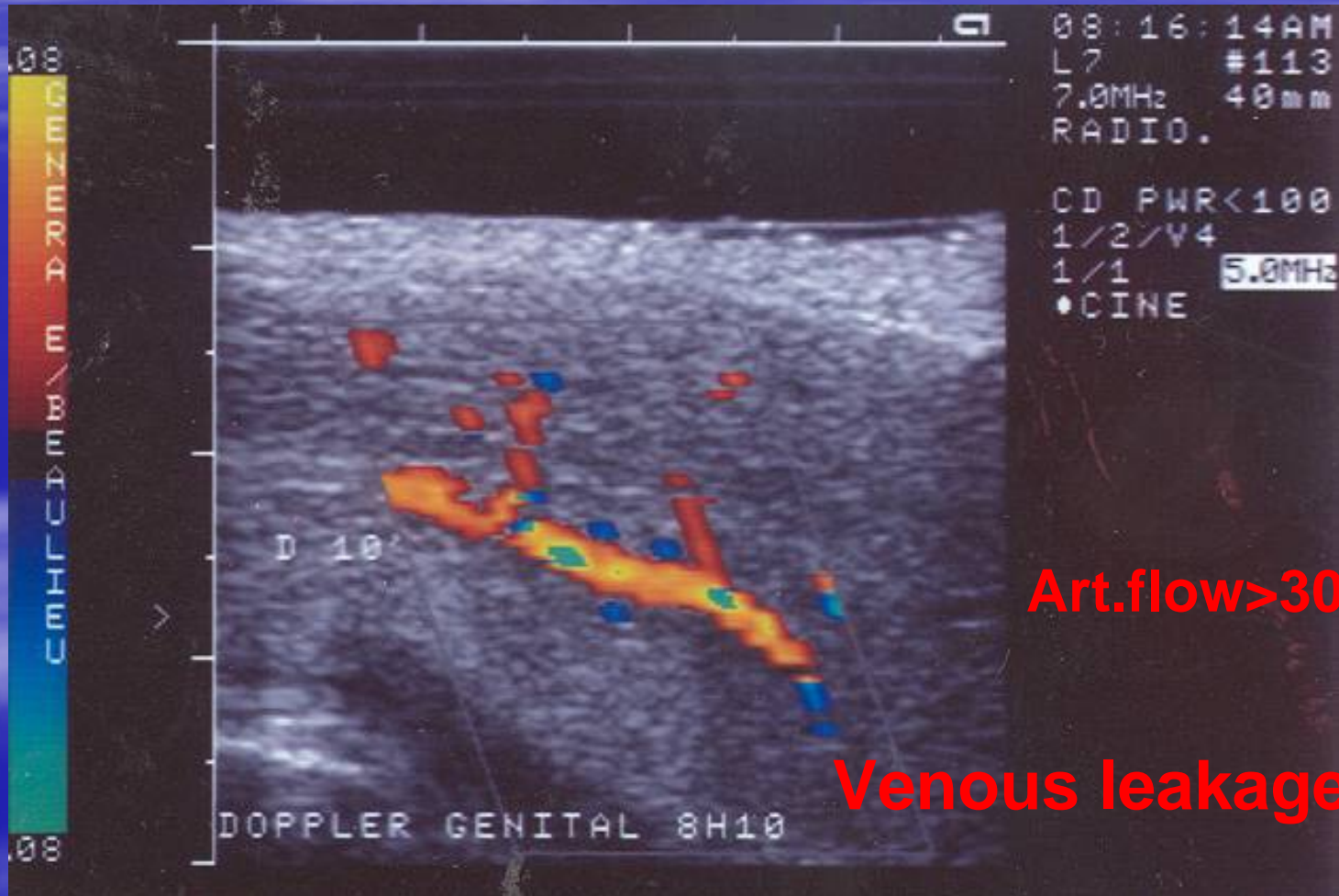
Specific tests

- **Duplex sonography + intracavernosal prostaglandin**

- Nocturnal penile tumescence test
- Vascular imaging
- Neurological testing

Duplex sonography

PGE1 injection



Art.flow>30cm/s

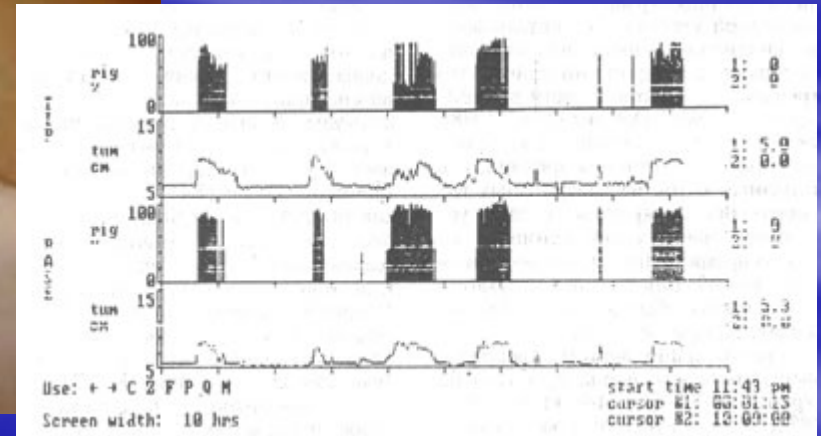
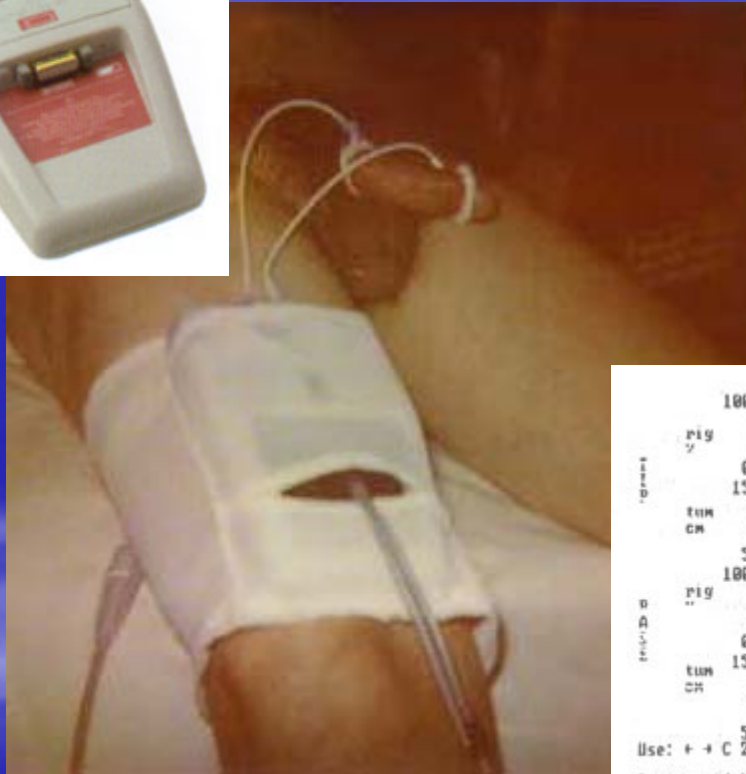
Venous leakage

NPT



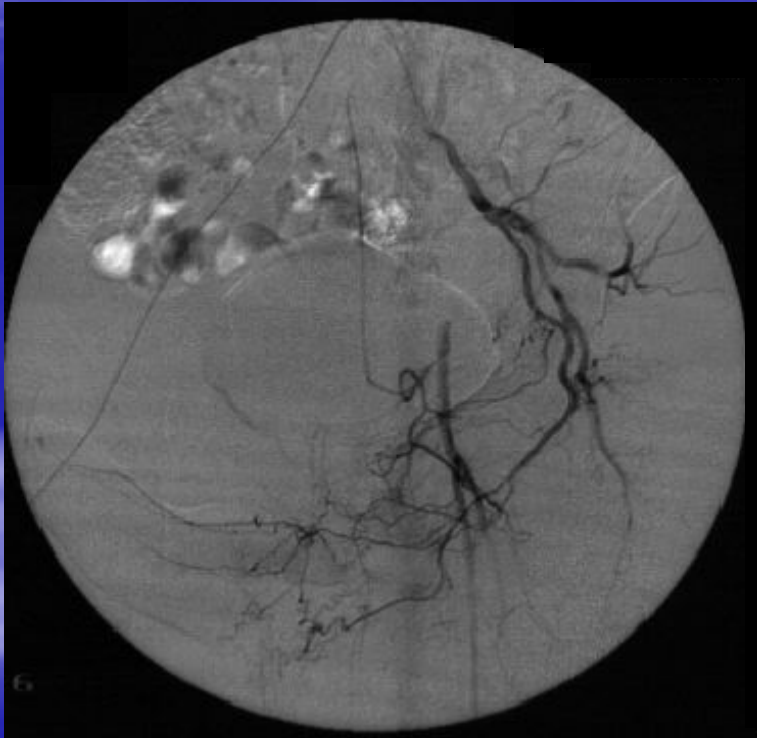
REM sleep phases

History

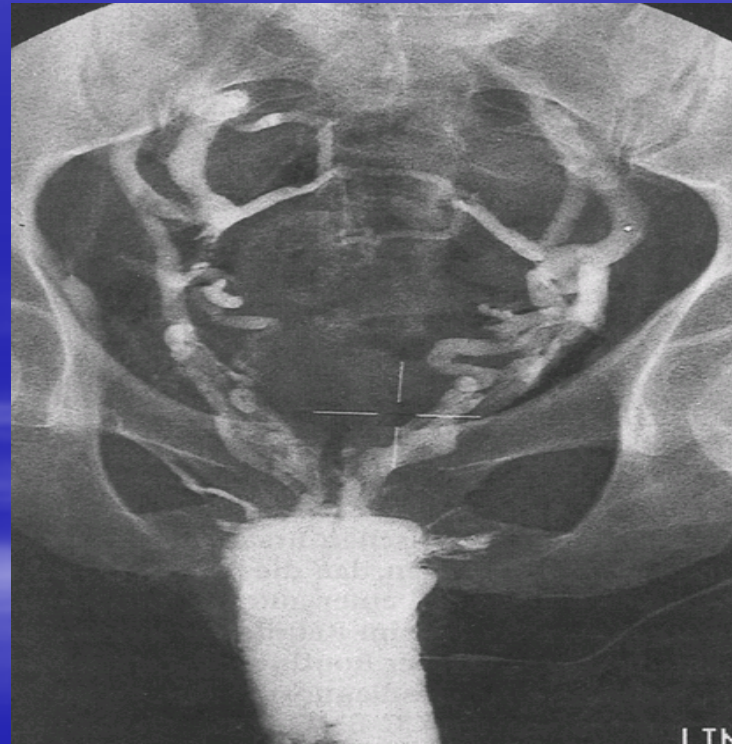


Vascular radiology

arteriography



cavernosography



Anxiety / fibrosis

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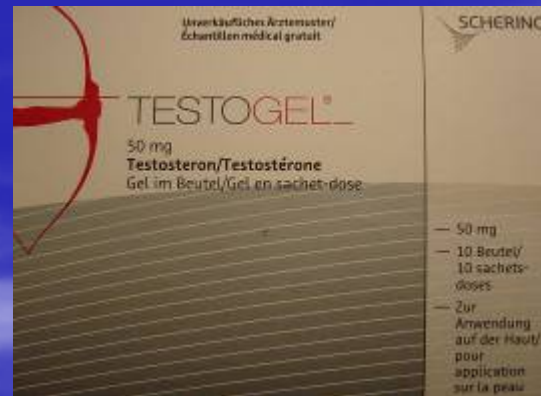
Hormonal treatment

- Testosterone injection
- Testosterone oral
- Testosterone transdermal



testosterone undecanoate

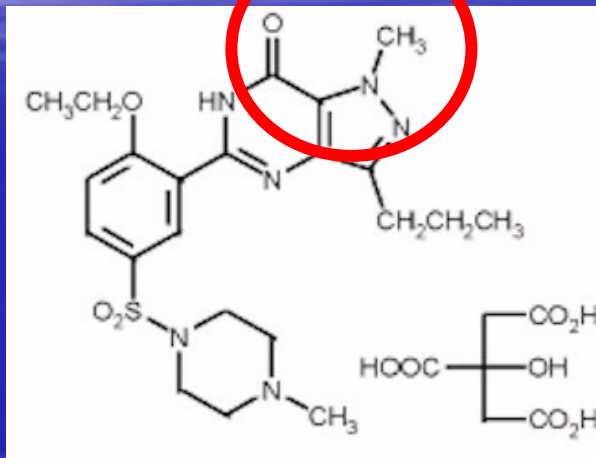
testosterone enanthate



Testosterone gel

PDE5 inhibitors

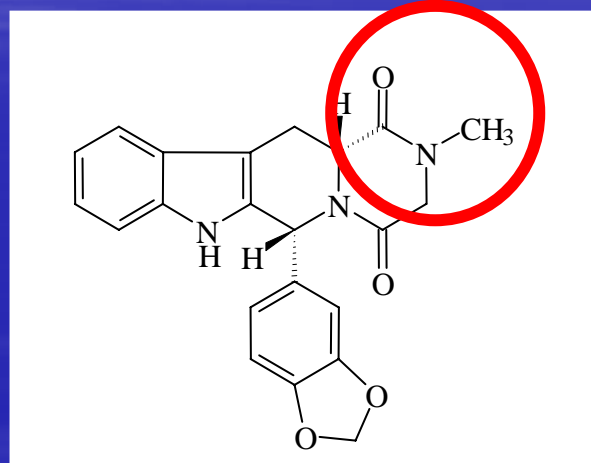
Sildenafil



Viagra[®]

Pfizer

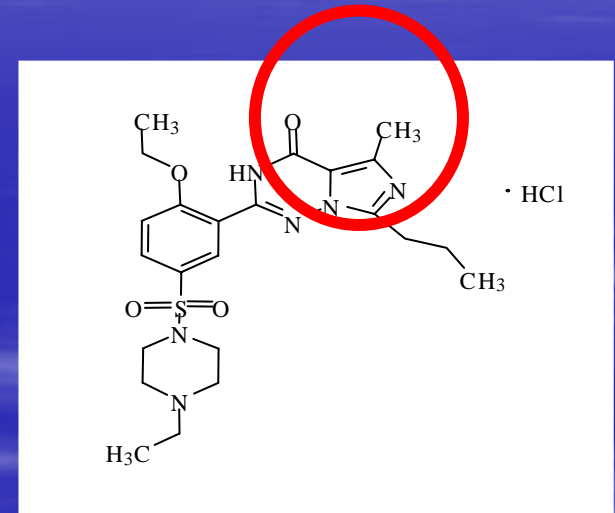
Tadalafil



Cialis[®]

Lilly-Icos

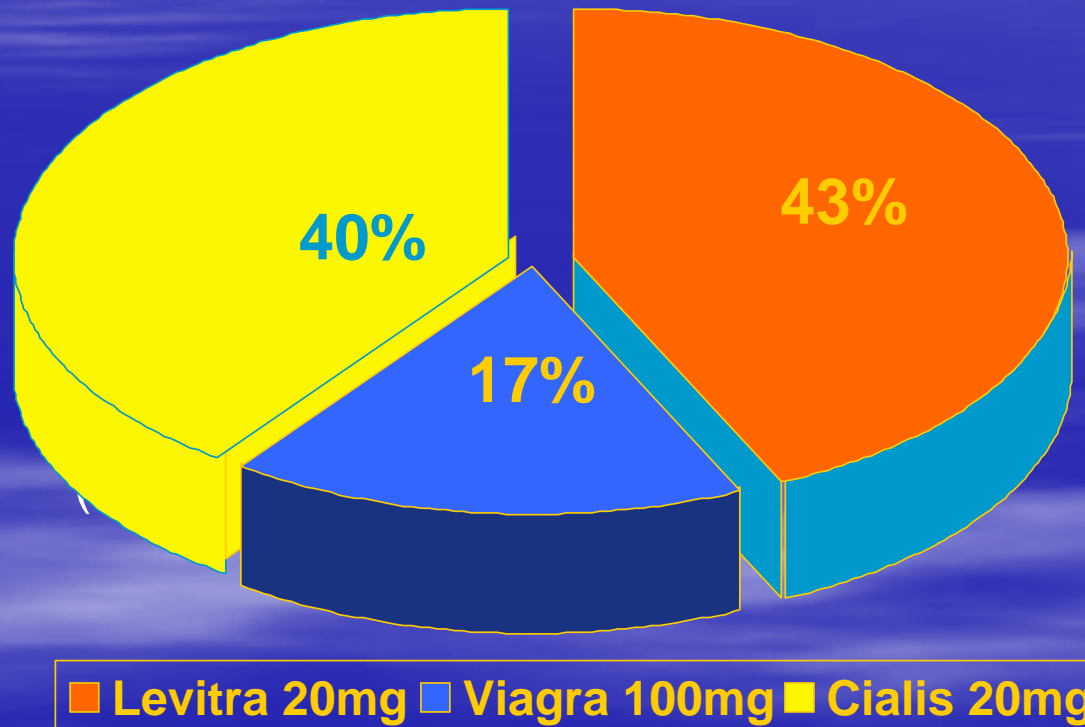
Vardenafil



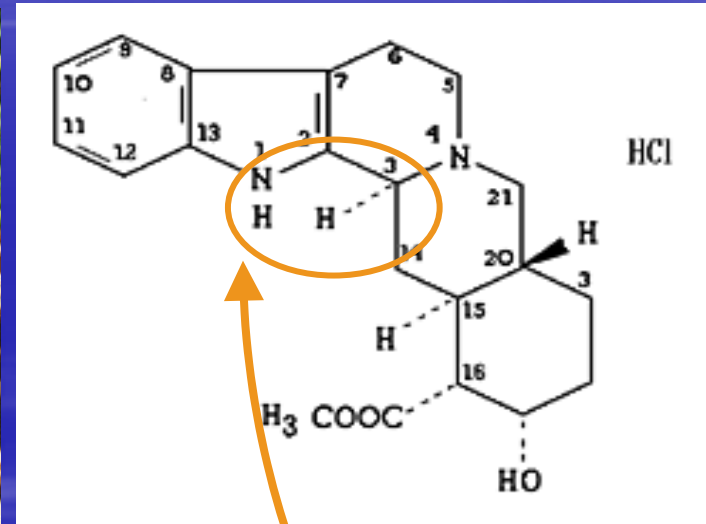
Levitra[®]

GSK-Bayer

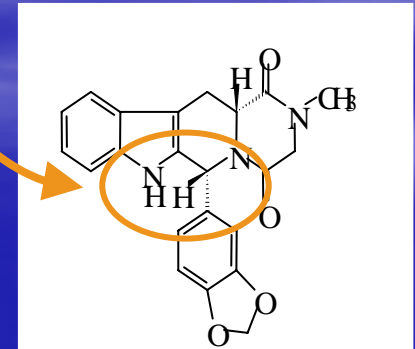
PDE5 inhib. preferences



Yohimbini



Tadalafil (Cialis)



MACA (*Lepidium Meyenii*)



Gonzales G. & al. 2002. Effect of *Lepidium Meyenii* (MACA) on sexual desire and its absent relationship with serum testosterone levels in adult healthy men. *Andrology* 34, 367-372.

PDE5 inhibitors, what dosage?

- Occasional treatment
 - 1 tabl. 30 to 60 min before planned intercourse
- Long term treatment
 - Tadalafil (Cialis): 1-2 x 20 mg per week during 2-8 weeks
 - Vardenafil (Levitra): 2-3x 5 or 10 mg per week during 2-8 weeks
 - Sildenafil (Viagra): 2-3x 25 or 50 mg per week during 2-8 weeks

PDE5 inhibitors, tips

- It is important to separate the intake of the pill from the intercourse in order to avoid a medically generated performance anxiety.
- The medication shall not necessarily induce a rigid erection
- It should facilitate an erection following a normal love process.

PDE5 inhibitors: warning

- Simultaneous treatments with NO donors (nitroglycerine etc) that will induce a possibly dangerous hypotension
- Contra indication to sexual activity
- Cardiovascular diseases like
 - Recent myocardial infarction or angina
 - Ictus
 - Arrhythmia, uncontrolled hypertension

Muse

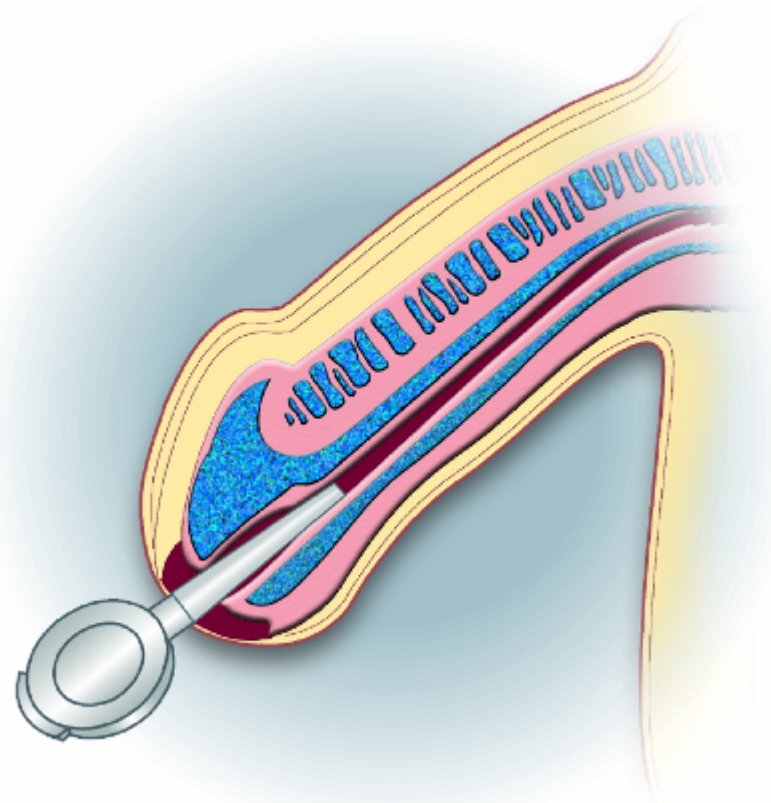
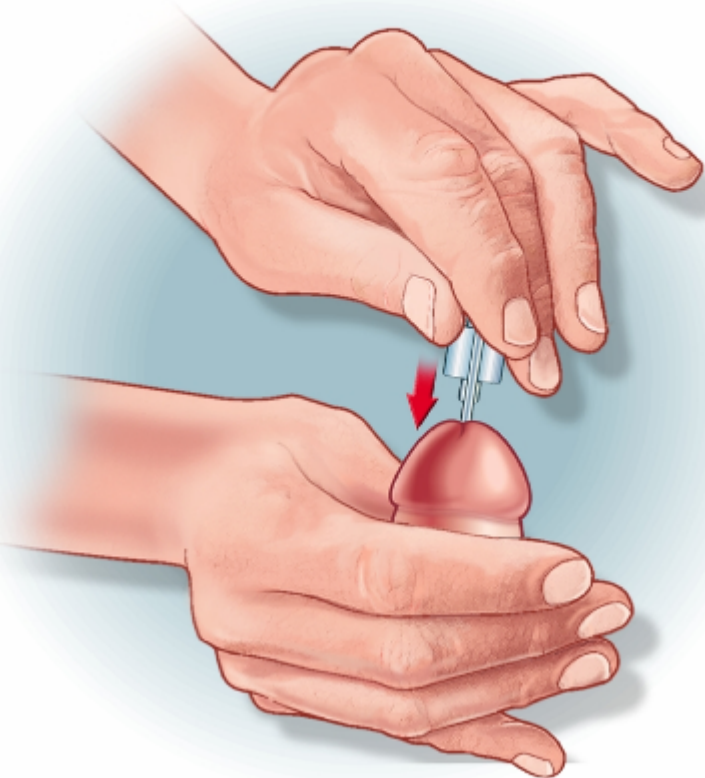
Alprostadil



MUSE

Alprostatil

MUSE (= Medical Urethral System for Erection):



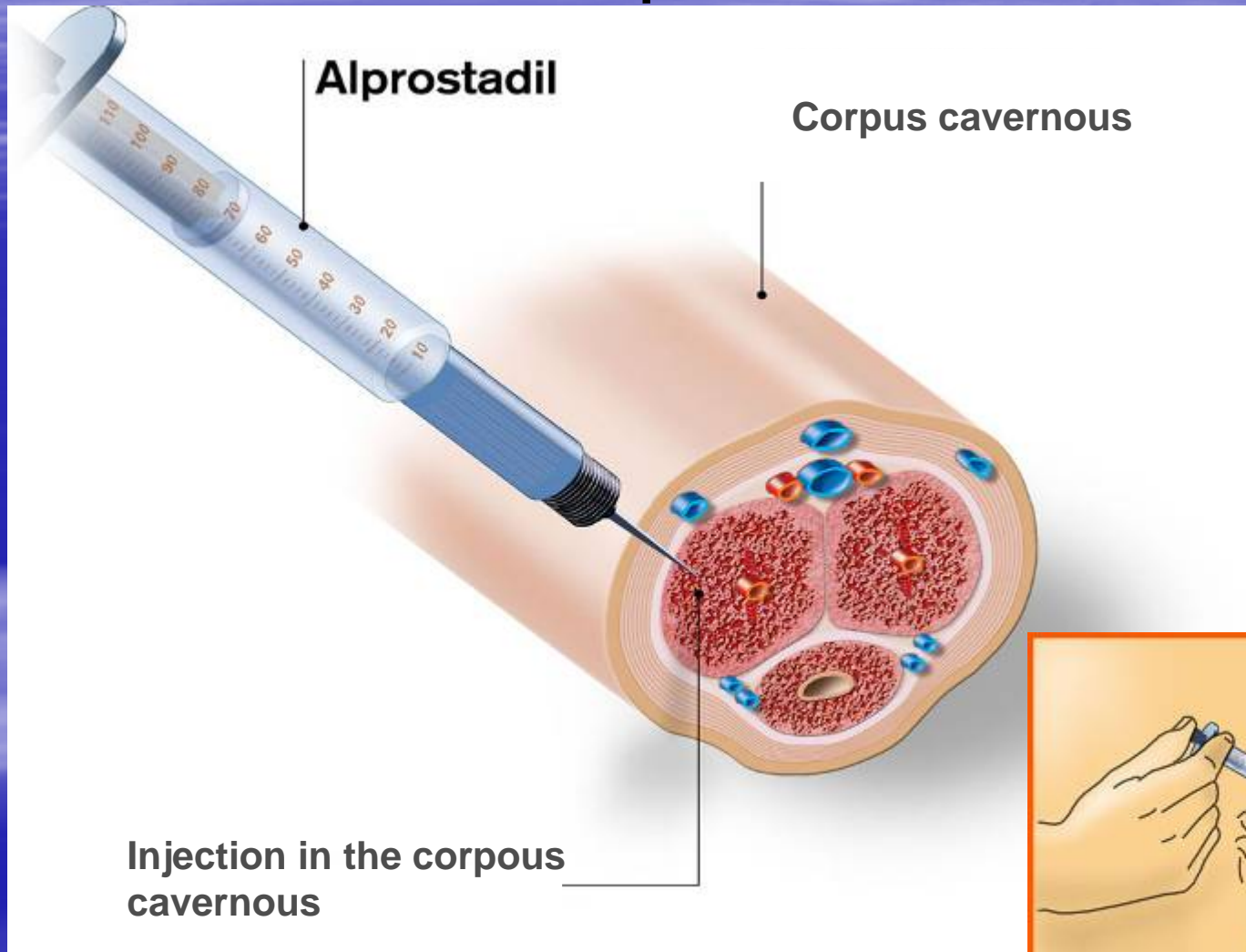
Caverject

Alprostatil



Caverject

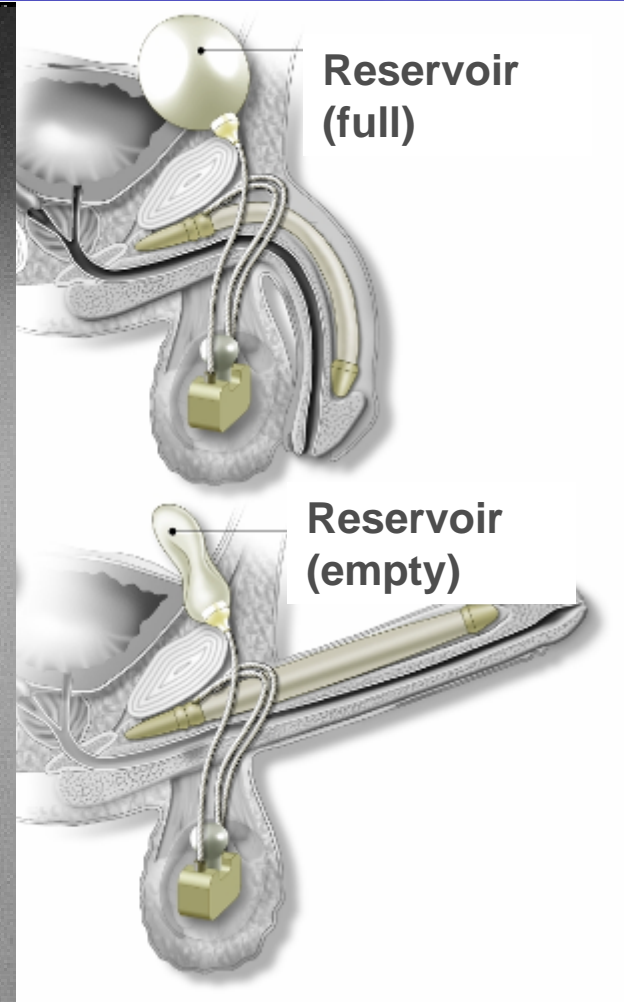
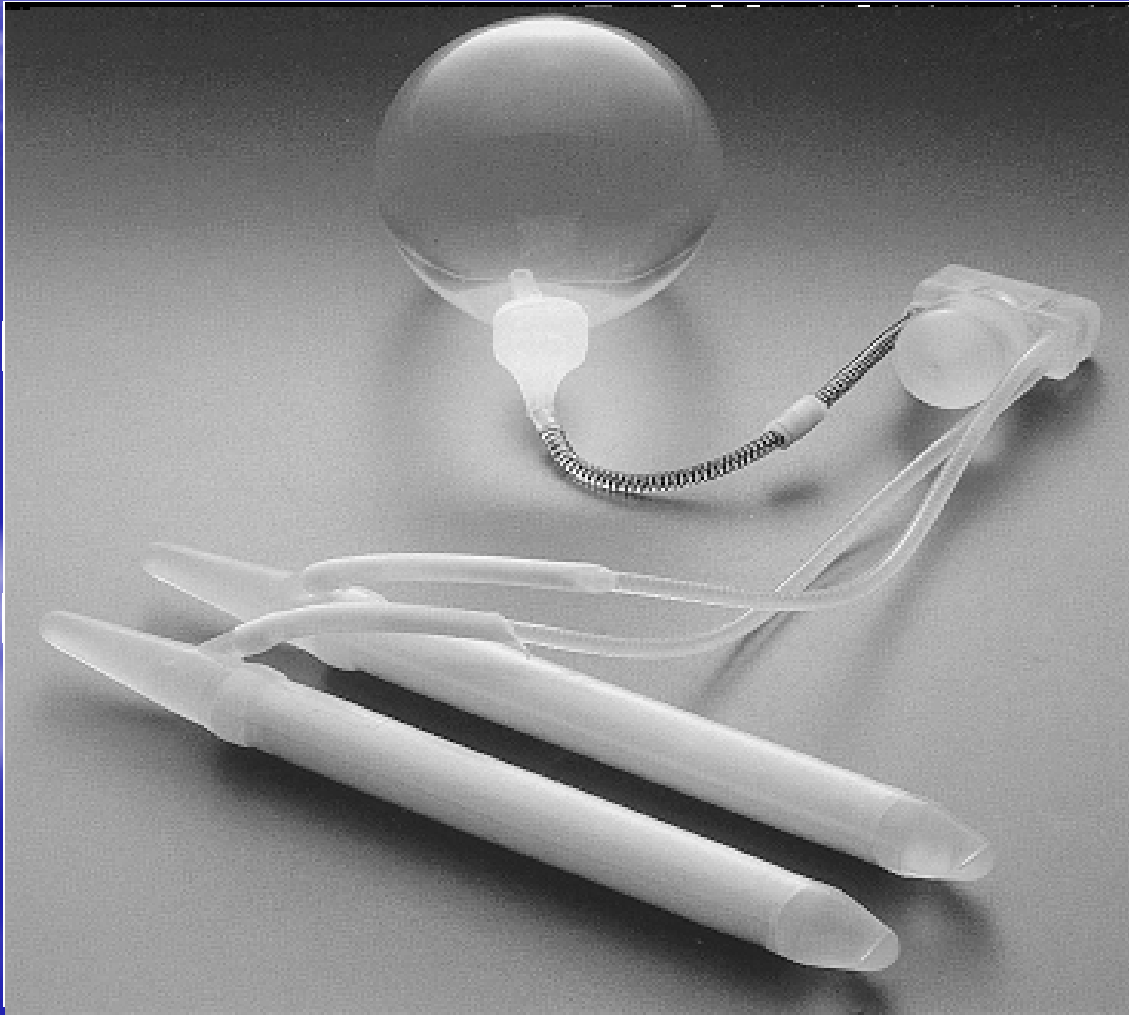
Alprostadil



Semi rigid implant Acuform (Mentor)



Inflatable implant (AMS 700)



What's in a man's mind

Dr Georges-A. de Boccard
March 10th, 2006

